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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,544	02/26/2004	Russell W. Gruhlke	10021091-1	9466

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AGILENT TECHNOLOGIES, INC.
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EXAMINER

MENEFEE, JAMES A

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/789,544	Applicant(s) GRUHLKE, RUSSELL W.	
	Examiner James A. Menefee	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

By amendment filed 5/5/2006, claim 15 is amended, claim 20 cancelled, and claim 21 added. Claims 1-19 and 21 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 329 999 ('999) in view of Swanson et al. (US 5,161,059).

Regarding claim 1, '999 discloses as in Fig. 1 an optical device comprising an optical cavity, an optical gain medium 14 that generates light in said cavity, and a focusing diffractive optical element (DOE) 40 optically coupled to the gain medium to receive light from said gain medium, said DOE being configured to diffractively focus said light of a selected wavelength back into the gain medium to cause said light of said selected wavelength to resonate within said cavity.

Regarding claim 10, '999 similarly discloses a method of selectively emitting light comprising generating light, reflecting said light within an optical cavity, wavelength selectively diffracting said light within said optical cavity so that light of a selected wavelength is resonant within said cavity, and emitting light of said selected wavelength from said cavity.

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Regarding claim 15, '999 similarly discloses a light source 14 operable to generate light, a DOE 40 configured to diffractively focus said light of a selected wavelength back onto said light source, means 10 for reflecting at least some of said light from said DOE to said light source, said reflecting means 10 partially defining an optical cavity resonant at said light of said selected wavelength.

Regarding claims 1, 10, and 15, it is not disclosed that the DOE is aberration corrected. Swanson teaches a DOE that is aberration corrected for spherical aberrations. See, e.g., col. 2 lines 29-30, though the entire document is relevant. It would have been obvious to one skilled in the art to use Swanson's DOE in the '999 system so that spherical aberrations may be corrected, as these aberrations are a known problem affecting performance.

Dependent claims:

Regarding claims 2, 11, and 16, as noted above Swanson's DOE corrects for spherical aberrations.

Regarding claims 3, 12, and 17, both '999 and Swanson use a DOE having circular gratings. Additionally, Swanson's DOE makes a typical spherical structure aspheric, see col. 5 lines 50-52, thus it can be said the correction uses circular gratings whose periodicities are based on an aspheric surface.

Regarding claims 4 and 18, the gratings of the optical elements of both '999 and Swanson have the profiles as claimed.

Regarding claim 5, '999 further discloses a reflective element 20 optically coupled to said DOE to reflect at least some of said light from said DOE to said gain medium.

Regarding claims 6-9, 13-14, and 19, '999 discloses the DOE may be transmissive and located between the gain medium and reflector (as in Fig. 1), or it may be reflective with the gain medium between the DOE and reflector (as in Fig. 3).

Regarding claim 21, '999 and Swanson each use a Fresnel zone plate. See '999 par. [0012], Swanson col. 3 line 11.

Response to Arguments

Applicant's arguments filed 5/5/2006 ("Remarks") have been fully considered but they are not fully persuasive.

Applicant's arguments that the 35 U.S.C. 112 rejections are overcome by the amendment are persuasive. Remarks at 6.

Applicant argues that there is no suggestion to combine the references. Remarks at 6-7. To paraphrase, applicant argues that it was not known that the DOE of '999 (referred to by applicant as Wolf et al.) has spherical aberrations, therefore one skilled in the art would not have been motivated to use Swanson's spherical aberration correcting DOE in the '999 system.

That '999 does not recognize the problem of spherical aberration does not preclude combining the references, because Swanson recognizes the problem. Swanson sees the problem and offers a solution: a compensated DOE. The motivation to combine is therefore found in Swanson. It is not persuasive that because Swanson and '999 do not use the same identical system one skilled in the art would not apply Swanson's DOE to '999's system. Each of the references are using a DOE, and the problem recognized and solved by the prior art is associated with the DOE; there is no reason that the DOE problem is not applicable to '999's DOE. One

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skilled in the art would recognize that Swanson's DOE is an improvement over the typical non-compensated DOE, and would therefore be motivated to use such a DOE in place of other typical DOE's. The problem is known in the prior art to exist because Swanson fixes it, and the problem is still present in '999 even if '999 does not explicitly recognize it.

There is nothing in the law that requires the primary reference to explicitly recognize the problem to be solved before modifying it with a secondary reference. Likewise, the secondary reference need not list each and every instance in which its teaching may be used. The combined teachings of the references are: laser system with typical DOE ('999); different system with improved DOE (Swanson). There is no reason that one skilled in the art would not look to Swanson to make improvements on the '999 DOE.¹

Applicant finally asserts that Swanson does not teach that the DOE is a Fresnel zone plate or kinoform as required by claim 21. Remarks at 8. Applicant points out a section of Swanson (col. 6 lines 36-40) that purportedly shows that the DOE is not a Fresnel zone plate. This is erroneous; it is clear that Swanson is discussing other optical elements that may *alternatively* be used "[i]n addition to Fresnel zone plates." Col. 6 line 29. Applicant has failed to notice that Swanson is applied to Fresnel zone plates in several previous passages. Col. 3 lines 11-54; col. 6 lines 17-28.

¹ While applicant did not make the argument, the analysis would differ if the references were non-analogous art. But '999 is within the same field of endeavor as applicant's (tunable laser with DOE), and Swanson is relevant to the particular problem solved by applicant (spherical compensation of DOE), therefore the references are analogous art. See MPEP 2141.01(a).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action (i.e. the rejection of claim 21). Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (571) 272-1944. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James Menefee
June 27, 2006

**JAMES MENEFEE
PRIMARY EXAMINER**